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CPR of a Different Sort: The Continuous Plankton Recorder

Although specific ships and the companies that participate in the Ship of Opportunity program (SOOP) have changed through the years, the Continuous Plankton Recorder (CPR) itself has not changed much since fisheries biologist Sir Alister Hardy developed the first prototype and merchant vessel version more than 80 years ago.

The mechanical device is about one meter (just over three feet) in length and is towed at a depth of 10 meters (about 33 feet) from the surface. The simple design of the CPR allows it to be cheaply and easily deployed from volunteer commercial cargo vessels during their normal operations.

Made of bronze, with more recent versions made of stainless steel, the CPR can be towed in rough seas and at routine ship speeds. The self-contained sampling cartridge filters plankton from the water on a band of silk mesh that is continually advanced by rollers, which are driven by water moving past a turbine on the tail of the CPR as it is towed.

As the silk advances it is rolled onto a spool in a small tank filled with a preservative. A single CPR cartridge can sample up to 500 nautical miles without being reloaded. Once ashore, the sample cartridge is removed and the silk mesh sent to a lab for analysis.

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Related links:

How the CPR Works: http://www.sahfos.ac.uk/about-us/cpr-survey/the-cpr-survey.aspx

The Power of Plankton (animation): http://www.youtube.com/watch?v=neNqDmXEBy4